

Appendix A

Soil, Groundwater, and Surface Water Performance Standards

Partial Remedy Implementation Work Plan
For the Butte Priority Soils Operable Unit/Butte Site

EPA June 2011



Table 1
Soil, Dust, and Vapor Action Levels in Residential Areas

Contaminant of Concern (COC)	Exposure Scenario	Concentration
Lead	Residential	1,200 milligrams per kilogram (mg/kg)
	Non-residential	2,300 mg/kg
Arsenic	Residential	250 mg/kg
	Commercial	500 mg/kg
	Recreational	1,000 mg/kg
Mercury	Residential	147 mg/kg
	Residential (vapor)	0.43 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$)

Table 2
Action Levels for Contaminated Solid Media in Non-Residential Areas

Contaminant	Commercial/Industrial	Recreational
Lead	2,300 mg/kg	2,300 mg/kg
Arsenic	500 mg/kg	1,000 mg/kg

Table 3
Standards for Ground Water

COC	Standard (Dissolved) ¹
Arsenic	10 $\mu\text{g}/\text{L}$
Cadmium	5 $\mu\text{g}/\text{L}$
Copper	1,300 $\mu\text{g}/\text{L}$
Lead	15 $\mu\text{g}/\text{L}$
Mercury	2 $\mu\text{g}/\text{L}$
Zinc	2,000 $\mu\text{g}/\text{L}$

¹ As presented in the BPRSOU ROD, these are the DEQ-7 standards published in February 2006.

Table 3
Numeric Water Quality Standards

Contaminant	Human Health Standard (µg/L)	Chronic Aquatic Standard (µg/L)	Acute Aquatic Standard (µg/L)	Notes
Aluminum	--	87	750	Dissolved fraction
Arsenic	10	150	340	
Cadmium	5	0.097	0.52	Hardness-dependent
Copper	1,300	2.85	3.79	Hardness-dependent
Iron	--	1,000	--	
Lead	15	0.545	13.98	Hardness-dependent
Mercury	0.05	0.91	1.7	
Silver	100	--	0.374	Hardness-dependent
Zinc	2,000	37	37	Hardness-dependent

Note: All standards are based on total recoverable analysis except for aluminum.

µg/L = micrograms per liter